

Claims:

1. A method for removing contaminants from a plating bath contained in a weir-type plater during idle times, comprising:
 positioning a lower portion of a substrate support assembly into the plating bath; and
 rotating the substrate support assembly at a rotation rate of between about 1 rpm and about 60 rpm for between about 5 seconds and about 30 seconds to circulate the plating solution such that contaminants accumulating on the surface of the plating solution are urged to flow over a weir of the plater.
2. The method of claim 1, wherein the lower portion of the substrate support assembly comprises a contact ring.
3. The method of claim 2, further comprising positioning a lower portion of the contact ring and scallops formed onto a lower surface of the contact ring into the plating bath.
4. The method of claim 2, further comprising positioning the contact ring in the plating bath such that electrical contact pins on the contact ring are immersed in the plating process.
5. The method of claim 4, further comprising deplating the electrical contact pins during the rotation.
6. The method of claim 5, further comprising applying a reverse bias to the contact pins, the reverse bias having a voltage of between about 100 mv and about 10 volts.
7. The method of claim 6, wherein the reverse bias has a duration of between about 1 second and about 360 seconds.

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Attorney Docket No.: AMAT/7683/CMP/ECP/RKK

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8. The method of claim 6, wherein the reverse bias is at least one of a constant bias, a ramping bias, and a pulsed bias.
9. The method of claim 1, further comprising filtering the plating solution urged to flow over the weir.
10. A method for filtering surface contaminants from a plating solution in a weir-type plater, comprising:
 - lowering an empty contact ring assembly into the plating solution;
 - rotating the contact ring assembly to circulate an upper layer of the plating solution;
 - receiving at least a portion of the upper layer of the plating solution over a weir;
 - filtering the received portion of the upper layer of the plating solution to remove contaminants therefrom; and
 - recirculating the filtered plating solution to the weir-type plater.
11. The method of claim 10, wherein rotating comprises rotating the contact ring at between about 5 rpm and about 35 rpm.
12. The method of claim 10, further comprising tilting the contact ring in the plating solution.
13. The method of claim 11, wherein lowering comprises positioning the contact ring such that a lower surface of the contact ring having a plurality of scallops positioned thereon is immersed in the plating solution and a plurality of electrical substrate contact pins are positioned above an upper surface of the plating solution.

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Attorney Docket No.: AMAT/7683/CMP/ECP/RKK

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14. The method of claim 11, wherein lowering comprises positioning a plurality of electrical substrate contact pins on an upper surface of the contact ring in the plating solution.
15. The method of claim 14, further comprising applying a deplating bias to the electrical substrate contact pins while the pins are immersed in the plating solution.
16. The method of claim 15, wherein the deplating bias is between about 1 volt and about 5 volts.
17. The method of claim 11, wherein filtering the received portion of the upper layer of the plating solution comprises passing the solution through a filter, the filter having a filtration porosity of between about 0.05 microns and about 2 microns.
18. A method for removing surface contaminants from a plating solution during idle time periods, comprising:
 - positioning a lower portion of a contact ring having a plurality of electrical substrate contact pins extending therefrom in contact with the plating solution;
 - rotating the contact ring to urge the surface contaminants to flow over a weir;
 - collecting the plating solution flowing over the weir; and
 - filtering the collected plating solution to remove the surface contaminants therefrom.
19. The method of claim 18, wherein rotating comprises rotating at between about 5 rpm and about 45 rpm.
20. The method of claim 19, wherein positioning the contact ring comprises immersing a plurality of scallops formed onto a lower surface of the contact ring and the plurality of electrical substrate contact pins in the plating solution.

PATENT

Attorney Docket No.: AMAT/7683/CMP/ECP/RKK

Express Mail No.: EV335470881US

21. The method of claim 20, further comprising applying a deplating bias to the plurality of electrical contact pins once immersed in the plating solution.

22. The method of claim 21, wherein the deplating bias has a voltage of between about 0.1 volts and about 10 volts.

23. The method of claim 18, further comprising tilting the contact ring at an angle of between about 3° and about 10° from horizontal.